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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,042	02/06/2004	Chien-Min Sung	22390.CIP	9003
20551	7590	03/22/2006	EXAMINER	
THORPE NORTH & WESTERN, LLP. 8180 SOUTH 700 EAST, SUITE 200 SANDY, UT 84070			NGUYEN, THUKHANH T	
			ART UNIT	PAPER NUMBER
			1722	
DATE MAILED: 03/22/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/775,042

Applicant(s)

SUNG, CHIEN-MIN

Examiner

Thu Khanh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 25-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/17/06</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-24 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Bundy et al (3,179,979) in view of Davies et al (5,772,756).

Bundy et al teach a high pressure die, comprising a plurality of arcuate complementary die segments (13-18) forming a horizontally oriented cavity (12), a pair of anvils, or punch members (47), and a plurality of piston cylinder (36, 37), corresponding to the force members for controlling the movement of the die segments (col. 3, lines 3-20), wherein the die can have up to six segments that are tapered toward the center of the cavity (Fig. 2, 15-18), wherein the die segments are supported by a plurality of ram segments (27-32), wherein each ram segment having a contour surface contacting the die segments (Fig. 1, 33) to reduce the tensile stress on the die segments (col. 4, lines 6-12), wherein the pair of punch are frustoconical anvils (col. 3, lines 53-56).

Bundy et al fail to disclose the dimensions of the mold chamber, the diamond seed and the catalyst material.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify Bundy et al by providing the mold chamber with appropriate

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dimension of the molding chamber because the size of the mold cavity or the molding chamber would depend on the size of the product.

In regard to the diamond seed and the catalyst material, these are the material that being formed inside the mold chamber and become part of the final product. These limitations do not positively further define the structure of the apparatus and thus can not be used to determine the patentability of an apparatus claim. Further, Bundy's apparatus is capable of forming a high pressure cavity for the forming of diamond seed in the presence of catalyst material. Furthermore, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re *Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device *is*, not what a device *does*." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (Emphasis in original).

In the alternative, when the material inside the mold cavity is important to define the structure of the apparatus, Davies et al disclose an apparatus and method for synthesis diamond, comprising crystal diamond seeds (24), a metallic catalyst/solvent (22) and a high pressure high temperature chamber 10 for growing diamond crystal.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify Bundy et al by providing a diamond seed and metallic catalyst solvent as taught by Davies et al because the diamond seed and the catalyst are necessary in forming crystal diamond.

***Response to Arguments***

3. Applicant's arguments filed January 09, 2006 have been fully considered but they are not persuasive. In regard to Bundy patent, the Applicant argued that:

Even assuming *arguendo* that the Bundy reference did teach or suggest a horizontally oriented cavity (12), Bundy is totally silent as to the types or arrangement of materials to be included within cavity (12). Nowhere in the specification is any specific material mentioned, nor whether a plurality of materials can be used. Neither does the specification teach or suggest any type of arrangement for more than one material to be placed into cavity (12) and subjected to high pressure using the disclosed device.

In regard to Davies, the Applicant argued that nothing in this reference "teaches or suggests configuring a raw material layer so that it diffuses into a catalyst layer in a diffusion direction that is substantially perpendicular to gravity.

Because the type and the arrangement of the material inside the mold cavity does not further define the structure of the apparatus, these limitations cannot be used to determine the patentability of the apparatus claims. Further, the type of the material being used in the press will depend on the desired product. One of ordinary skill in the art would have been motivated to select the right material for the right product. How the material is arranged in a mold cavity would also depend on the property of the material, the desired size, shape, and properties of the product. Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re *Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device *is*, not what a device *does*." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (Emphasis in original)

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4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Khanh T. Nguyen whose telephone number is 571-272-1136. The examiner can normally be reached on Monday- Friday, 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TN

DUANE SMITH  
PRIMARY EXAMINER

*D-S*  
*3-20-06*